(b) (6)

From: (b) (6) NAVFAC LANT, RE
Sent: Wednesday, April 9, 2014 11:07 AM
To: (b) (6) NAVFAC PAC, AM
Subject: FW: Historical Letters from DOH to DON re: Chlordane
Attachments: CHLORDANE HISTORICAL.PDF; CHLORDANE SOIL EXPOSURE.PDF

(b) (6)

Per (b) 's e-mail last week about filing all of our chlordane letters, please save these. Thanks.

V/r,
Sheryl

-----Original Message-----
From: (b) (6) NAVFAC PAC.
Sent: Tuesday, April 08, 2014 4:44 PM
To: (b) (6) NAVFAC LANT, RE; (b) (6) NAVFAC PAC
Subject: FW: Historical Letters from DOH to DON re: Chlordane

-----Original Message-----
From: (b) (6) NAVFAC Pacific, EV
Sent: Monday, April 07, 2014 2:14 PM
To: (b) (6) MARFORPAC
Cc: (b) (6) NAVFAC PAC.; (b) (6) NAVFAC Pacific, EV3
Subject: Historical Letters from DOH to DON re: Chlordane

Hi R(b) (6),

Found these letters today while going through files Michelle left me...are these the letters you were referring to in this morning's call? The 1999 letter from DOH provides guidance on how the Navy was to address chlordane-contaminated soil...

Thanks,
(b) (6)

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

(b) (6)
NAVFAC Pacific
Environmental Restoration (b) (6))
258 Makalapa Drive, Suite 100
JBPHH, HI 96860-3134
(b) (6)

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1821 — LAST

AYETANO
OF HAWAII

A

1822 —
1824 — 181
182 — LAST

LAWRENCE MIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
HEER OFFICE

November 6, 1995

95-387PA

(b) (6)
PACDIVENGCOMM
(Makalapa)
Pearl Harbor, Hawaii

Subject: Chlordane Action Levels

Dear (b) (6):

This is in response to your request for guidance on chlordane action levels in soil. We understand that chlordane has been released primarily from its application as an insecticide at several areas in the past.

Pathways by which people could be exposed to chlordane include oral consumption of contaminated food, inhalation of contaminated air and also through the contact with contaminated soil. A major pathway of concern for a historical release, as it appears to be in this case, is contact with contaminated soil.

The model used to determine a soil screening level (SSL) for chlordane is based on residential exposure by ingestion, inhalation and dermal contact given the potential proximity of the sites to residential areas and potential exposure pathways. The **non-carcinogenic SSL is 3.78 mg/kg.** The non-carcinogenic SSL was selected based on a **short-term exposure** scenario. The physico-chemical, toxicity and site specific-data to run the model are detailed in the enclosure.

If you have any questions or need more information, please call me at 586-4353.

Sincerely,

Pierette L. Arroyo

enc

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
HEER OFFICE

September 15, 1999 ChlorUSN

(b) (6), Quality Control Manager
Actus - Sundt Group
301 Lehua Avenue
Pearl City, Hawaii 96782

Dear (b) (6)

This is in reply to your faxed letter, dated August 25, 1999, concerning disposal of chlordane-contaminated soil at a U.S. Navy Family Housing project.

As we discussed in the August 17 meeting with Navy PWC personnel, chlordane-contaminated soil is permitted by State and Federal regulations to be buried on the same site from which it is excavated. In order to prevent future health risk to people who may swallow or inhale tiny amounts of chlordane-contaminated dust, the contaminated soil should be covered with either six inches of clean soil or the concrete slabs of the new houses which you will build. A laboratory should test the "clean" soil for organochlorine pesticides and heavy metals.

During excavation activities, stored chlordane-contaminated soils should be covered with 6 mil polyethylene sheeting in order to prevent the dispersion of contaminated dust.

Contaminated soil should not be moved to areas which might be uncovered in the future, such as sites planned for future construction, or the vicinity of underground piping which may need repair, or vegetable gardens.

When contaminated soil is excavated or uncovered, even when dust-suppression measures are in place, some chlordane will escape by evaporation into the air. However, the atmosphere should dilute the vapors to undetectable levels within 50 feet. For personal air monitoring requirements during construction activities, the contractor should refer to applicable OSHA standards. Environmental or area monitoring, although not required by EPA, is recommended during work in occupied residential areas. The results from personal air monitoring will indicate when levels of chlordane are in excess of the OSHA prescribed personal

exposure limits, or when engineering controls (i.e., dust mitigation) are ineffective or not feasible.

Otherwise, if contaminated soil is not disturbed, chlordane adsorbs (holds on) to clay soil or plants' organic matter, according to past research cited in the Hazardous Substances Data Bank of the National Library of Medicine in Bethesda, Maryland. In clay soil, it will not leach downward to ground water or be carried upward by rising water tables; it leaches through sand, coral, or gravel, as shown by the detection of minute traces of chlordane in the water at the Navy Halawa Shaft and the Honolulu Board of Water Supply's Halawa Wells. If not disturbed, chlordane will not evaporate up toward the surface. Depending on climate and soil conditions, chlordane biodegrades in 2-50 years or converts to heptachlor epoxide, which is even more toxic.

If anyone has further questions, please call me at 586-7539.

Sincerely,

Leslie K.L. Au

LESLIE K.L. AU, M.Sc.
Toxicologist, HEER Office